

$$\frac{l_1}{l_2} = \frac{2}{5} \text{ RATIO BETWEEN CORRESPONDING SIDES}$$

RATIO BETWEEN VOLUMES
OF CORRESPONDING SHAPES IS

$$\frac{l_1^3}{l_2^3} = \left(\frac{l_1}{l_2} \right)^3$$

$$\frac{V_1}{V_2} = \frac{2^3}{5^3} = \frac{8}{125}$$

#10 p.596

$$\frac{h}{H} = \frac{4}{7}$$

$$V_h = 320 \text{ cm}^3$$

$$V_H = ?$$

$$\frac{V_h}{V_H} = \frac{4^3}{7^3}$$

$$\frac{320}{V_H} = \frac{64}{343}$$

$$64V_H = 320.343$$

$$V_H = \frac{320.343}{64} = 1715 \text{ cm}^3$$

#12

$$V_1 = 324 \text{ cm}^3$$

$$\frac{A_1}{A_2} = \frac{9}{25}$$

$$\frac{h}{H} = ?$$

$$\frac{V_2}{V_1} = ?$$

$$V_2 = ?$$

$$\frac{A_1}{A_2} = \frac{9}{25}$$

$$\frac{h_1}{H_2} = \sqrt{\frac{9}{25}} = \frac{3}{5}$$

$$\sqrt{\frac{9}{25}} = \frac{\sqrt{9}}{\sqrt{25}} = \frac{3}{5}$$

$$\begin{pmatrix} 13 \\ 14 \end{pmatrix}$$

$$\frac{5^3}{3^3} = \frac{V_2}{V_1}$$

$$\frac{125}{27} = \frac{V_2}{V_1}; \quad \frac{125}{27} = \frac{V_2}{324}$$

$$27V_2 = 125 \cdot 324; \quad V_2 = \frac{125 \cdot 324}{27} = 1500 \text{ cm}^3$$

#13

$$V_1 = \pi R^2 \cdot h = \pi \cdot 9^2 \cdot 24 = 81 \cdot 24\pi = 1944\pi$$

$$\frac{V_2}{V_1} = \frac{4608\pi}{1944\pi} = \frac{64}{27}$$

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$$\frac{H}{h} = \sqrt[3]{\frac{64}{27}} = \frac{4}{3}$$

$$\frac{H}{24} = \frac{4}{3}$$

$$\begin{aligned} 3H &= 4 \cdot 24 \\ H &= \frac{4 \cdot 24}{3} = 32 \text{ ft} \end{aligned}$$